UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,527	10/17/2003	Maarten Menzo Wentink	08-1400-US	7957

20306 7590 03/03/2010
MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE
32ND FLOOR
CHICAGO, IL 60606

EXAMINER	
ANDREWS, LEON T	

ART UNIT	PAPER NUMBER
2462	

MAIL DATE	DELIVERY MODE
03/03/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/688,527	WENTINK, MAARTEN MENZO	
	Examiner	**Art Unit**	
	LEON ANDREWS	2462	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 15 December 2009.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-37 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-37 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. **Claims 1-37** are being rejected under 35 U.S.C. 103(a) by Awater et al. (Patent No.: US 7,046,649 B2) in view of Gray et al. (Patent No.: US 6,473,419 B1).

Regarding Claim 1, Awater et al. discloses a method (method, column 3, line 52) comprising: determining a power save status of a first station (Bluetooth radio in the Park mode is deactivated (power save) whilst the IEEE 802.11 transmission takes place, column 8, lines 3-6) wherein said first station communicates via a shared-communications channel (Fig. 4, HV1, forward and reverse link; first and second systems share a common physical layer, columns 3, 4 lines 49-50, 22-23 respectively; both an IEEE 802.11 transceiver and a Bluetooth transceiver transmit and receive in the same frequency simultaneously using the same band, column 4, lines 24-29; IEEE 802.11 and Bluetooth functions integrated on the same chip with interoperability functionality on the same chip, column 12, lines 39-42) in a wireless local area network (IEEE 802.11 wireless LAN, IEEE 802.11 is selected, column 6, lines 46-47) in accordance with a first modulation scheme (Bluetooth radio using Frequency Shift Keying (FSK) modulation, column 8, lines 44-45); and

responsive to a determination that the first station is not in a power save state (active Bluetooth voice transmits and receive in a Bluetooth slot (not in a power save state), then the IEEE 802.11 transceiver must schedule its packet transmissions in between the Bluetooth packets, column 8, lines 11-15),

(i) enabling transmission protection at a second station (IEEE 802.11 transceiver is activated and the interoperability device deactivates the Bluetooth transceiver, column 6, lines 34-37);

(ii) from the second station, transmitting a message via the shared-communications channel requesting that a third station enable transmission protection (IEEE 802.11 transceiver is activated (to receive and transmit IEEE packets to and from the interoperability device, column 5, lines 64-65) and the interoperability device (third device) connected to control lines (shared channel) deactivates the Bluetooth transceiver, column 6, lines 26-28 and 34-37).

Awater et al. fails to disclose power save status of a first station and enabling transmission protection at a second station.

But, Gray et al. discloses operation of a mobile station to the control hold power save for sensitive communication applications to ensure ready access to the communication channel and allocation of the dedicated channel to the mobile station, column 7, lines 18-26, transmission on the reverse dedicated channel is not required (transmission protection) when transitioning from the control hold to the control hold power save occurs and the reverse link dedicated control channel is turned off, column 7, lines 28-32.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Gray et al.'s power save and transmission protection because this would have allowed the dedicated channel to be maintained, and signaling required to obtain a dedicated channel to be minimal, column 7, lines 39-41.

Regarding Claim 2, Awater et al. discloses the method of claim 1 wherein determining a power save status of a first station (Bluetooth radio in the Park mode is deactivated (power save) whilst the IEEE 802.11 transmission takes place, column 8, lines 3-6) comprises:

transmitting one of a Request-to-Send frame (RTS, request-to-send, column 8, lines 19-20), a Data frame, and a Null frame to the first station via the shared-communications channel in accordance with the first modulation scheme; and

receiving one of an Acknowledgement frame (acknowledgement, (ACK) frame, column 8, lines 18-19) and a Clear-to-Send frame (CTS, clear-to-send, column 8, lines 19-20) from the first station.

Regarding Claim 3, Awater et al. discloses the method of claim 1 wherein transmitting a message via the shared-communications channel requesting that a third station enable transmission protection (IEEE 802.11 transceiver is activated (to receive and transmit IEEE packets to and from the interoperability device, column 5, lines 64-65) and the interoperability device (third device) connected to control lines (shared channel) deactivates the Bluetooth transceiver, column 6, lines 26-28 and 34-37) comprises broadcasting a management frame

(management frames, column 2, line 8) via the shared-communications channel.

Awater et al. fails to disclose enable transmission protection.

But, Gray et al. discloses transmission on the reverse dedicated channel is not required (transmission protection) when transitioning from the control hold and the reverse link dedicated control channel is turned off, column 7, lines 28-32.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Gray et al.'s transmission protection because this would have allowed the dedicated channel to be maintained, and signaling required to obtain a dedicated channel to be minimal, column 7, lines 39-41.

Regarding Claim 4, Awater et al. discloses the method of claim 3 wherein the management frame is one of:

(i) a Beacon frame (Beacon frames sent at a regular interval by an AP, column 2, lines 5-6) indicating that protection status is active; and

(ii) a Probe-Response frame (Probe Response frames sent by AP, column 2, lines 9-10) indicating that protection status is active (Probe Request frames sent by the STA are followed by the Probe Response frames sent by the AP which allows the STA to actively scan whether there is an AP operating on a certain channel frequency and to show what parameter settings this AP is using, column 2, lines 8-13).

Regarding Claim 5, Awater et al. discloses the method of claim 1 wherein the first modulation scheme is based on one of Barker modulation and Complementary Code Keying modulation (CCK, Complementary Code Keying, column 1, lines 43-44).

Regarding Claim 6, Awater et al. discloses a method comprising:

receiving a first frame from a station (Probe Request frames which are sent by an STA, column 2, lines 8-9) via a shared-communications channel (Fig. 4, HV1, forward and reverse links) in a wireless local area network (IEEE 802.11 wireless LAN, IEEE 802.11 is selected, column 6, lines 46-47) wherein the station communicates in accordance with a first modulation scheme (Frequency Shift Keying (FSK) modulation, column 8, lines 44-45);

determining whether the first station is in power save mode (Bluetooth radio system is deactivated into a Park mode whilst the IEEE 802.11 transmission takes place (column 8, lines 3-6). This causes Bluetooth radio system to be in a power save mode since the Bluetooth transmission is held back);

in response to receiving the first frame from the first station, enabling transmission protection at a second station (IEEE 802.11 transceiver is activated and the interoperability device deactivates the Bluetooth transceiver, column 6, lines 26-28 and 34-37) and broadcasting from the second station an IEEE 802.11 Probe-Response frame (Probe Response frames sent by the AP, column 2, lines 9-10) via the shared-communications channel;

wherein said IEEE 802.11 Probe-Response frame indicates that transmission protection status is active (Probe Request frames sent by the STA are followed by the Probe Response frames sent by the AP which allows the STA to actively scan whether there is an AP operating

on a certain channel frequency and to show what parameter settings this AP is using, column 2, lines 8-13).

Awater et al. fails to disclose power save status of a first station and enabling transmission protection at a second station.

But, Gray et al. discloses operation of a mobile station to the control hold power save for sensitive communication applications to ensure ready access to the communication channel and allocation of the dedicated channel to the mobile station, column 7, lines 18-26, transmission on the reverse dedicated channel is not required (transmission protection) when transitioning from the control hold to the control hold power save occurs and the reverse link dedicated control channel is turned off, column 7, lines 28-32.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Gray et al.'s power save and transmission protection because this would have allowed the dedicated channel to be maintained, and signaling required to obtain a dedicated channel to be minimal, column 7, lines 39-41.

Regarding Claim 7, Awater et al. discloses the method of claim 6 wherein the first modulation scheme is based on one of Barker modulation and Complementary Code Keying modulation (CCK, Complementary Code Keying, column 1, lines 43-44).

Regarding Claim 8, Awater et al. discloses a method (method, column 3, line 52) comprising:

determining a power save status of a first station (Bluetooth radio in the Park mode is deactivated (power save) whilst the IEEE 802.11 transmission takes place, column 8, lines 3-6) that communicates via a share-communications channel (Fig. 4, HV1, forward and reverse links) in a wireless local area network (IEEE 802.11 wireless LAN, IEEE 802.11 is selected, column 6, lines 46-47) in accordance with a first modulation scheme (Bluetooth radio using Frequency Shift Keying (FSK) modulation, column 8, lines 44-45);

responsive to determining the power save status of the first station, alternately enabling (enable both radio systems to function together, column 8, line 38) and disabling (Bluetooth radio system is deactivated whilst an IEEE 802.11 transmission takes place, column 8, lines 5-6) transmission protection at a second station (IEEE 802.11 transceiver, column 6, line 36), wherein the second station is configured to communicate via the shared communication channel in (IEEE 802.11 transceiver is activated and the interoperability device connected to control lines (shared channel) deactivates the Bluetooth transceiver, column 6, lines 26-28 and 34-37) accordance with the first modulation scheme and a second modulation scheme (802.11 pulse position modulation, column 1, lines 36-40); and

transmitting a message from the second station via the shared communication channel indicating a transmission protection status of the second station (IEEE 802.11 transceiver is activated (to receive and transmit IEEE packets to and from the interoperability device, column 5, lines 64-65) and the interoperability device connected to control lines (shared channel) deactivates the Bluetooth transceiver, column 6, lines 26-28 and 34-37);

wherein the second modulation scheme is undetectable to the first station (IEEE 802.11 radio transceiver, column 4, line 24) that communicates via the shared-communications channel

in accordance with the first modulation scheme (PPM, pulse position modulation, column 1, lines 39-40); and

wherein the first modulation scheme and the second modulation scheme are different from each other.

Awater et al. fails to disclose first station in power save and enabling transmission protection.

But, Gray et al. discloses operation of a mobile station to the control hold power save for sensitive communication applications to ensure ready access to the communication channel and allocation of the dedicated channel to the mobile station, column 7, lines 18-26, transmission on the reverse dedicated channel is not required (transmission protection) when transitioning from the control hold to the control hold power save occurs and the reverse link dedicated control channel is turned off, column 7, lines 28-32.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Gray et al.'s power save and transmission protection because this would have allowed the dedicated channel to be maintained, and signaling required to obtain a dedicated channel to be minimal, column 7, lines 39-41.

Regarding Claim 9, Awater et al. discloses the method of claim 8 wherein the enabling of transmission protection and the disabling of transmission protection are periodic (transmit periodically, column 8, lines12-13) with respect to one of (i) frames transmitted and (ii) time (Fig. 4, TS1).

Regarding Claim 10, Awater et al. discloses the method of claim 8 wherein the enabling of transmission protection and the disabling of transmission protection are sporadic (transmit and receive periodically, column 8, lines 12-13) with respect to one of (i) frames transmitted and (ii) time (Fig. 4, TS1).

Regarding Claim 11, Awater et al. discloses the method of claim 8 further comprising extending transmission protection for a first interval (Fig. 4, TS1) when receiving a first frame (Probe Request frames which are sent by an STA, column 2, lines 8-9) from the first station while transmission protection is enabled, wherein the first interval is measured in one of (i) time (Fig. 4, TS1) and (ii) frames.

Regarding Claim 12, Awater et al. discloses the method of claim 8 further comprising activating transmission protection for a first interval (Fig. 4, TS1) when receiving a first frame (Probe Request frames which are sent by an STA, column 2, lines 8-9) from the first station while transmission protection is disabled, wherein said first interval is measured in one of (i) time (Fig. 4, TS1) and (ii) frames.

Regarding Claim 13, Awater et al. discloses the method of claim 8 wherein the transmitting a message from the second station via the shared communication channel indicating a transmission protection status of the second station (IEEE 802.11 transceiver is activated (to receive and transmit IEEE packets to and from the interoperability device, column 5, lines 64-65) and the

interoperability device connected to control lines (shared channel) deactivates the Bluetooth transceiver, column 6, lines 26-28 and 34-37) comprises transmitting a first management frame (management frames, column 2, line 8) via said shared-communications channel.

Awater et al. fails to disclose enable transmission protection.

But, Gray et al. discloses transmission on the reverse dedicated channel is not required (transmission protection) when transitioning from the control hold and the reverse link dedicated control channel is turned off, column 7, lines 28-32.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Gray et al.'s transmission protection because this would have allowed the dedicated channel to be maintained, and signaling required to obtain a dedicated channel to be minimal, column 7, lines 39-41.

Regarding Claim 14, Awater et al. discloses the method of claim 13 wherein the first management frame is one of:

(i) a Beacon frame (Beacon frames sent at a regular interval by an AP, column 2, lines 5-6) indicating that protection status is active; and

(ii) a Probe-Response frame (Probe Response frames sent by the AP, column 2, lines 9-10) indicating that protection status is active (Probe Request frames sent by the STA are followed by the Probe Response frames sent by the AP which allows the STA to actively scan whether there is an AP operating on a certain channel frequency and to show what parameter settings this AP is using, column 2, lines 8-13).

Regarding Claim 15, Awater et al. discloses the method of claim 8:

wherein the first modulation scheme is based on one of Barker modulation and Complementary Code Keying modulation (CCK, Complementary Code Keying, column 1, lines 43-44); and

wherein the second modulation scheme is based on Orthogonal Frequency Division Multiplexing modulation (OFDM, Orthogonal Frequency Division Multiplexing, column 1, lines 47-48).

Regarding Claim 16, Awater et al. discloses a method (method, column 3, line 52) comprising:

transmitting from a first station a first frame (Probe Request frames which are sent by an STA, column 2, lines 8-9) comprising a duration field value (Fig. 3, duration of HV-I is 330 us, column 8, lines 60-61) to a second station (Bluetooth radio transceiver, column 4, line 25) via a shared-communications channel (Fig. 4, HV1, forward and reverse links) in a wireless local area network (IEEE 802.11 wireless LAN, IEEE 802.11 is selected, column 6, lines 46-47) in accordance with a first modulation scheme (Frequency Shift Keying (FSK) modulation, column 8, lines 44-45);

receiving at the first station a second frame (Beacon frames sent at a regular interval by an AP, column 2, lines 5-6) from a third station (IEEE 802.11 radio transceiver, column 4, line 24) via the shared-communications channel in accordance with a second modulation scheme (PPM, pulse position modulation, column 1, lines 39-40) during a time interval (Fig. 4, TS1 – TS8) defined by the duration field value;

determining whether the third station is in power save mode (IEEE 802.11 transmission is held back or in the Park mode if the Bluetooth ACL packet transmission or reception is in progress (column 11, lines 1-6). This causes the IEEE 802.11 to be in a power save mode since it is being held back); and

receiving at the first station a third frame (Probe Response frames sent by the AP, column 2, lines 9-10) via the shared-communications channel in accordance with said first modulation scheme after the time interval (Fig. 4, TS3);

wherein the first modulation scheme is undetectable to the third station; and

wherein the first modulation scheme and the second modulation scheme are different from each other.

Awater et al. fails to disclose second station in power save.

But, Gray et al. discloses transmission on the reverse link dedicated control channel when transition indicated that the control hold to the control hold power save occurs, the reverse link dedicated channel is turned off, column 7, lines 28-32.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Gray et al.'s power save because this would have allowed the dedicated channel to be maintained, and signaling required to obtain a dedicated channel to be minimal, column 7, lines 39-41.

Regarding Claim 17, Awater et al. discloses the method of claim 16:

wherein the first modulation scheme is based on Orthogonal Frequency Division Multiplexing modulation (OFDM, Orthogonal Frequency Division Multiplexing, column 1, lines 47-48); and

wherein the second modulation scheme is based on one of Barker modulation and Complementary Code Keying modulation (CCK, Complementary Code Keying, column 1, lines 43-44).

Regarding Claim 18, Awater et al. discloses the method of claim 16 wherein the transmitting is one of (i) periodic (periodic transmissions, claim 29, column 15, line 40) and (ii) sporadic.

Regarding Claim 19, Awater et al. discloses the method of claim 16 wherein the first frame further comprises instructions to refrain from transmitting frames for a time interval (Bluetooth transceiver is deactivated (for a time interval) by the interoperability device whenever the IEEE 802.11 transceiver is activated and vice versa, column 6, lines 34-37; active Bluetooth transmits and receive while the IEEE 802.11 transceiver must schedule its packet transmissions in between the Bluetooth packets, column 8, lines 11-15; IEEE packet exchange period is taken into account by the interoperability device which include RTS/CTS, column 8, lines 16-19).

Regarding Claim 20, Awater et al. discloses an apparatus (Bluetooth radio transceiver, column 4, line 25) comprising:

a processor (Fig. 6, CPU 622) for determining a power save status of a first station (Bluetooth radio in the Park mode is deactivated whilst the IEEE 802.11 transmission takes

place, column 8, lines 3-6) wherein the first station communicates via a shared-communications channel (Fig. 4, HV1, forward and reverse links) in a wireless local area network (IEEE 802.11 wireless LAN, IEEE 802.11 is selected, column 6, lines 46-47) in accordance with a first modulation scheme (Frequency Shift Keying (FSK) modulation, column 8, lines 44-45) and in response to determining a power save status of the first station, enabling transmission protection at a second station (IEEE 802.11 transceiver is activated (to receive and transmit IEEE packets to and from the interoperability device, column 5, lines 64-65) and the interoperability device connected to control lines deactivates the Bluetooth transceiver, column 6, lines 26-28 and 34-37); and

a transmitter (Bluetooth radio transceiver, column 4, line 25) for enabling transmission protection at a third station (IEEE 802.11 radio transceiver, column 4, line 24) via the shared-communications channel wherein the enabling of transmission protection at the third station is responsive to a determination of the power save status (Bluetooth radio in the Park mode is deactivated (power save) whilst the IEEE 802.11 transmission takes place, column 8, lines 3-6) of the first station.

Awater et al. fails to disclose power save status of a first station and enabling transmission protection at a second station.

But, Gray et al. discloses operation of a mobile station to the control hold power save for sensitive communication applications to ensure ready access to the communication channel and allocation of the dedicated channel to the mobile station, column 7, lines 18-26, transmission on the reverse dedicated channel is not required (transmission protection) when transitioning from

the control hold to the control hold power save occurs and the reverse link dedicated control channel is turned off, column 7, lines 28-32.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Gray et al.'s power save and transmission protection because this would have allowed the dedicated channel to be maintained, and signaling required to obtain a dedicated channel to be minimal, column 7, lines 39-41.

Regarding Claim 21, it is the corresponding apparatus claim to method **Claim 3**. Therefore, it is rejected for the same reasons explained above.

Regarding Claim 22, it is the corresponding apparatus claim to method **Claim 4**. Therefore, it is rejected for the same reasons explained above.

Regarding Claim 23, it is the corresponding apparatus claim to method **Claim 5**. Therefore, it is rejected for the same reasons explained above.

Regarding Claim 24, Awater et al. discloses an apparatus (Bluetooth radio transceiver, column 4, line 25) comprising:

a receiver (IEEE 802.11 transceiver, column 6, line 36) configured to receive a first frame from a station (Probe Request frames which are sent by an STA, column 2, lines 8-9) via a shared-communications channel (Fig. 4, HV1, forward and reverse links) in a wireless local area network (IEEE 802.11 wireless LAN, IEEE 802.11 is selected, column 6, lines 46-47) wherein

the station communicates in accordance with a first modulation scheme (Frequency Shift Keying (FSK) modulation, column 8, lines 44-45 and wherein receiver is configured to determine whether the station is in power save mode (Bluetooth radio system is deactivated (power save) into a Park mode whilst the IEEE 802.11 transmission takes place (column 8, lines 3-6). This causes Bluetooth radio system to be in a power save mode since the Bluetooth transmission is held back); and

a transmitter (IEEE 802.11 transceiver, column 6, line 36) configured to communicate via the shared communication channel (IEEE 802.11 transceiver is activated (to receive and transmit IEEE packets to and from the interoperability device, column 5, lines 64-65) and the interoperability device connected to control lines (shared channel) deactivates the Bluetooth transceiver, column 6, lines 26-28 and 34-37) in accordance with the first modulation scheme and a second modulation scheme (802.11 pulse position modulation, column 1, lines 36-40) and configured to broadcast an IEEE 802.11 Probe-Response frame (Probe Response frames sent by the AP, column 2, lines 9-10) via the shared-communications channel in response to determining whether the station is in power save mode (Bluetooth radio in the Park mode is deactivated (power save) whilst the IEEE 802.11 transmission takes place, column 8, lines 3-6);

wherein the IEEE 802.11 Probe-Response frame indicates that a transmission protection status is active (Probe Request frames sent by the STA are followed by the Probe Response frames sent by the AP which allows the STA to actively scan whether there is an AP operating on a certain channel frequency and to show what parameter settings this AP is using, column 2, lines 8-13).

Awater et al. fails to disclose station in power save.

But, Gray et al. discloses operation of a mobile station to the control hold power save for sensitive communication applications to ensure ready access to the communication channel and allocation of the dedicated channel to the mobile station, column 7, lines 18-26.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Gray et al.'s power save because this would have allowed the dedicated channel to be maintained, and signaling required to obtain a dedicated channel to be minimal, column 7, lines 39-41.

Regarding Claim 25, it is the corresponding apparatus claim to method **Claim 7**. Therefore, it is rejected for the same reasons explained above.

Regarding Claim 26, Awater et al. discloses an apparatus (Bluetooth radio transceiver, column 4, line 25) comprising:

a receiver (Bluetooth radio transceiver, column 4, line 25) for receiving in accordance with a first modulation scheme (Frequency Shift Keying (FSK) modulation, column 8, lines 44-45) and a second modulation scheme (PPM, pulse position modulation, column 1, lines 39-40) via a shared-communications channel (Fig. 4, HV1, forward and reverse links) in a wireless local area network (IEEE 802.11 wireless LAN, IEEE 802.11 is selected, column 6, lines 46-47);

a transmitter (Bluetooth radio transceiver, column 4, line 25) for alternately enabling (enable both radio systems to function together, column 8, line 38) and disabling (Bluetooth radio system is deactivated whilst an IEEE 802.11 transmission takes place, column 8, lines 5-6)

transmission protection at a first station (Bluetooth radio transceiver, column 4, line 25) and at the apparatus responsive to determining that a second station is in power save mode (Bluetooth radio system is deactivated into a Park mode whilst the IEEE 802.11 transmission takes place (column8, lines 3-6). This causes Bluetooth radio system to be in a power save mode since the Bluetooth transmission is held back), wherein the second station communicates via a shared-communications channel (Fig. 4, HV1, forward and reverse links) in accordance with a first modulation scheme (Frequency Shift Keying (FSK) modulation, column 8, lines 44-45);

wherein the first modulation scheme is undetectable to the second station (IEEE 802.11 radio transceiver, column 4, line 24) that communicates via the shared-communications channel in accordance with a second modulation scheme (PPM, pulse position modulation, column 1, lines 39-40); and

wherein the first modulation scheme and the second modulation scheme are different from each other.

Awater et al. fails to disclose power save status of a first station.

But, Gray et al. discloses operation of a mobile station to the control hold power save for sensitive communication applications to ensure ready access to the communication channel and allocation of the dedicated channel to the mobile station, column 7, lines 18-26.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Gray et al.'s power save this would have allowed the dedicated channel to be maintained, and signaling required to obtain a dedicated channel to be minimal, column 7, lines 39-41.

Regarding Claim 27, it is the corresponding apparatus claim to method **Claim 9**. Therefore, it is rejected for the same reasons explained above.

Regarding Claim 28, it is the corresponding apparatus claim to method **Claim 10**. Therefore, it is rejected for the same reasons explained above.

Regarding Claim 29, it is the corresponding apparatus claim to method **Claim 11**. Therefore, it is rejected for the same reasons explained above.

Regarding Claim 30, it is the corresponding apparatus claim to method **Claim 12**. Therefore, it is rejected for the same reasons explained above.

Regarding Claim 31, it is the corresponding apparatus claim to method **Claim 13**. Therefore, it is rejected for the same reasons explained above.

Regarding Claim 32, it is the corresponding apparatus claim to method **Claim 14**. Therefore, it is rejected for the same reasons explained above.

Regarding Claim 33, it is the corresponding apparatus claim to method **Claim 15**. Therefore, it is rejected for the same reasons explained above.

Regarding Claim 34, Awater et al. discloses an apparatus (Bluetooth radio transceiver, column 4, line 25) comprising:

a transmitter (Bluetooth radio transceiver, column 4, line 25) for transmitting a first frame (Probe Request frames which are sent by an STA, column 2, lines 8-9) comprising a duration field value (Fig. 3, duration of HV-I is 330 us, column 8, lines 60-61) to a first station (Bluetooth radio transceiver, column 4, line 25) via a shared-communications channel (Fig. 4, HV1, forward and reverse links) in a wireless local area network (IEEE 802.11 wireless LAN, IEEE 802.11 is selected, column 6, lines 46-47) in accordance with a first modulation scheme (Frequency Shift Keying (FSK) modulation, column 8, lines 44-45) , and for determining whether a second station is in power save mode (IEEE 802.11 transmission is held back or in the Park mode if the Bluetooth ACL packet transmission or reception is in progress (column 11, lines 1-6). This causes the IEEE 802.11 to be in a power save mode since it is being held back); and

a receiver (Bluetooth radio transceiver, column 4, line 25) for receiving a second frame (Beacon frames sent at a regular interval by an AP, column 2, lines 5-6) from the second station (IEEE 802.11 radio transceiver, column 4, line 24) via the shared-communications channel in accordance with a second modulation scheme (PPM, pulse position modulation, column 1, lines 39-40) during a time interval (Fig. 4, TS1 – TS8) defined by the duration field value; and

receiving a third frame (Probe Response frames sent by the AP, column 2, lines 9-10) via the shared-communications channel in accordance with the first modulation scheme after the time interval (Fig. 4, TS3); and

a processor (Fig 6, CPU 622) for enabling transmission protection at the transmitter;

wherein the first modulation scheme is undetectable to the second station; and

wherein the first modulation scheme and said second modulation scheme are different from each other.

Awater et al. fails to disclose second station in power save.

But, Gray et al. discloses transmission on the reverse link dedicated control channel when transition indicated that the control hold to the control hold power save occurs, the reverse link dedicated channel is turned off, column 7, lines 28-32.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Gray et al.'s power save because this would have allowed the dedicated channel to be maintained, and signaling required to obtain a dedicated channel to be minimal, column 7, lines 39-41.

Regarding Claim 35, it is the corresponding apparatus claim to method **Claim 17**. Therefore, it is rejected for the same reasons explained above.

Regarding Claim 36, it is the corresponding apparatus claim to method **Claim 18**. Therefore, it is rejected for the same reasons explained above.

Regarding Claim 37, it is the corresponding apparatus claim to method **Claim 19**. Therefore, it is rejected for the same reasons explained above.

Response to Arguments

2. Applicant's arguments filed December 15, 2009 have been considered as follows:

- In the remarks on pages 13-15 of the amendment, applicant contends that the lines shown in Awater et al. are not shared communication channels in a wireless local area network.
- The examiner respectfully maintains the prior prosecution on the claim limitations. Additionally, Awater et al. discloses first and second systems share a common physical layer, columns 3, 4 lines 49-50, 22-23 respectively; both an IEEE 802.11 transceiver and a Bluetooth transceiver transmit and receive in the same frequency simultaneously using the same band, column 4, lines 24-29; IEEE 802.11 and Bluetooth functions integrated on the same chip with interoperability functionality on the same chip, column 12, lines 39-42) in a wireless local area network (IEEE 802.11 wireless LAN, column 6, line 46.

Conclusion

3. **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon Andrews whose telephone number is (571) 270-1801. The examiner can normally be reached on Monday through Friday 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rao S. Seema can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LA/la
February 22, 2010

/Donald L Mills/
Primary Examiner, Art Unit 2462